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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/705,954 | 11/13/2003 | Shoji Mimotogi | 04329.3180 | 6725 |

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EXAMINER

ROSASCO, STEPHEN D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1756

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/705,954

Applicant(s)

MIMOTO ET AL.

Examiner

Stephen Rosasco

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/13/03, 3/31/04</u> | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. Nojima et al. (7,008,731) in view of Park. et al (7,001,697).

Nojima et al. (claims 1, 2, 8 and 9) essentially teach the claimed invention including a method of manufacturing a photomask comprising calculating the variation in dimensions and determining an exposure latitude on the basis of the dimensions of the mask; and judging if the photomask is defective or non-defective on the basis of whether or not the exposure latitude falls within a prescribed exposure latitude.

The teachings of Nojima et al. differ from those of the applicant in that the applicant teaches the use of a unit drawing pattern as the reference for determining the dimensional variation.

Park et al. teach (see claims) a method of manufacturing a photomask, the method comprising: quantifying the critical dimensions to obtain a distribution of values of the critical dimensions on the wafer; comparing the critical dimension values to a reference critical dimension value in order to ascertain the differences therebetween; determining, in relation to localities on the photomask, degrees to which the intensity of the illumination used in the exposure process would need to be decreased in order to reduce the differences, respectively, between the critical dimension values and the reference critical dimension value.

And wherein said determining degrees to which the intensity of the illumination used in the exposure process would need to be decreased comprises: ascertaining dose latitude values representative of variations in a critical dimension of a pattern formed by an exposure process with respect to changes in the dose of the illumination used to form the pattern; and calculating exposure dose variations, corresponding to the differences between the critical dimension values and the reference critical dimension value, using the dose latitude values and said differences.

Park et al. also teach (see col. 11, line 56+) that the degree to which the intensity of illumination is to be modified is set for each of the 15 unit areas based on a critical dimension of that portion of the pattern formed in the unit area or on the difference between the critical dimension and a reference critical dimension.

It would have been obvious to one having ordinary skill in the art to take the teachings of Nojima et al. and combine them with the teachings of Park. et al. in order to make the claimed invention because

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuura (6,208,469).

Matsuura teaches (see claims) a method of transferring identical transfer patterns at a plurality to positions of an exposure field on a photoresist film, the step of calculating a dimensional variation in CD (Critical Dimension) of the transfer patterns and a variation in exposure dose latitude in the exposure field, and when the variation in exposure dose latitude is smaller than a predetermined percent.

Matsuura teaches a method for calculating dimensional variations of a unit pattern in one exposure field and a variation in exposure dose latitude in said one exposure field.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (6,208,469) in view of Park. et al (7,001,697).

The claimed invention is directed to a method for evaluating a photo mask comprising: preparing a photo mask including a unit drawing pattern; finding a dimensional variation relating to the photo mask, the dimensional variation including first and second dimensional variations, the first dimensional variation occurring due to a positional displacement and size mismatch of the unit drawing pattern in the photo mask and the second dimensional variation occurring due to etching and development relating to a manufacturing of the photo mask; estimating a deteriorated amount of an exposure latitude occurring due to the dimensional variation of the photo mask using the dimensional variation and a degree of influence of the dimensional variation for the exposure latitude; and judging quality of the photo mask by comparing the deteriorated amount of the exposure latitude and an allowable deteriorated amount of the exposure latitude.

Matsuura is repeated here as recited above.

The teachings of Matsuura differ from those of the applicant in that the applicant teaches the method for evaluating a photomask.

Park et al. is repeated here as recited above.

It would have been obvious to one having ordinary skill in the art to take the teachings of Matsuura and combine them with the teachings of Park. et al. in order to make the claimed invention because any evaluation of the exposure pattern would in effect be an evaluation of the mask pattern that is used in the exposure.

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Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Rosasco', with a stylized, sweeping flourish extending from the end of the name.

S. Rosasco
Primary Examiner
Art Unit 1756

S. Rosasco

08/18/06